

Using LandSat and other Satellite Imagery Products for Compliance

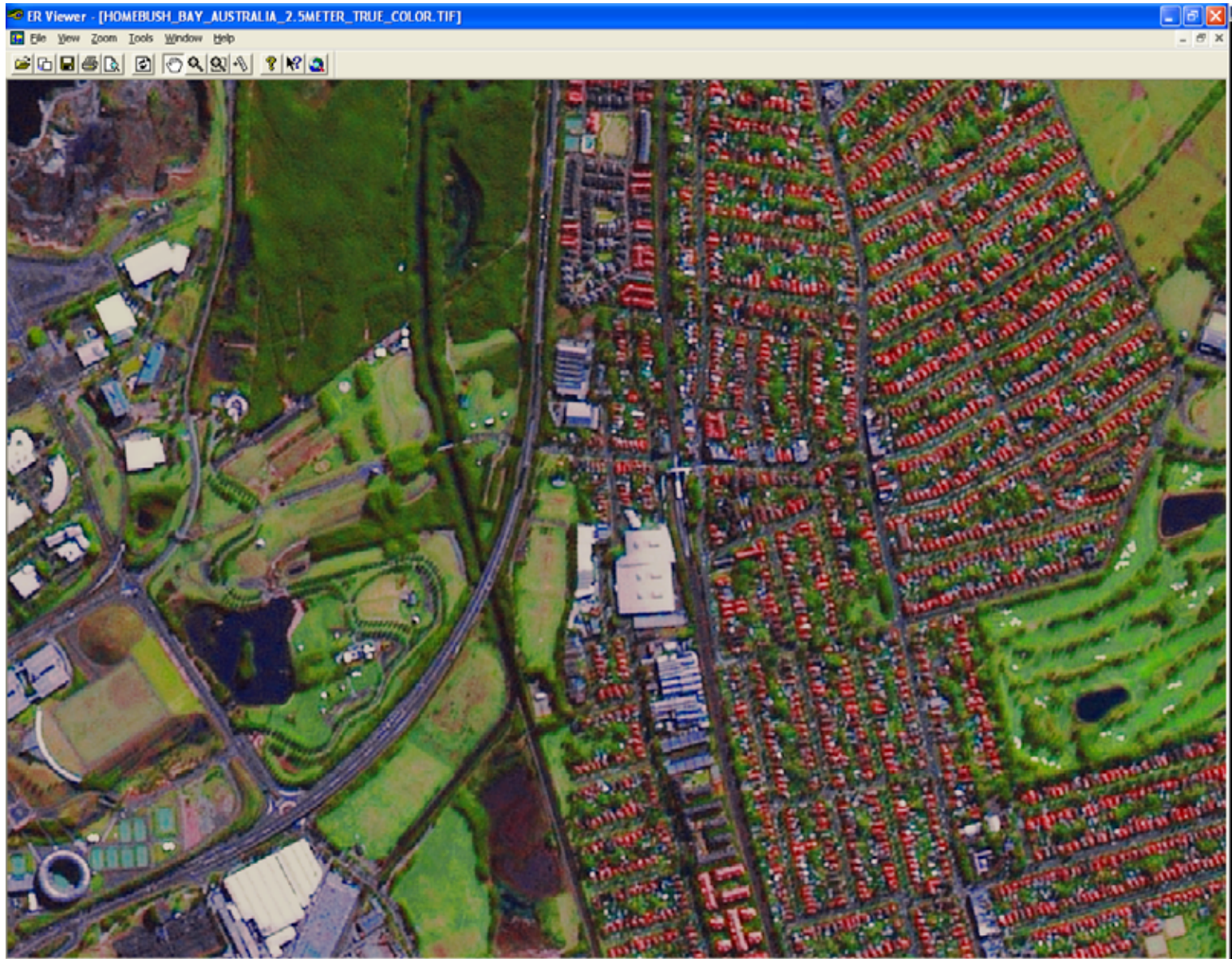
NAIP Planning Meeting
Nov 15-18, 2004



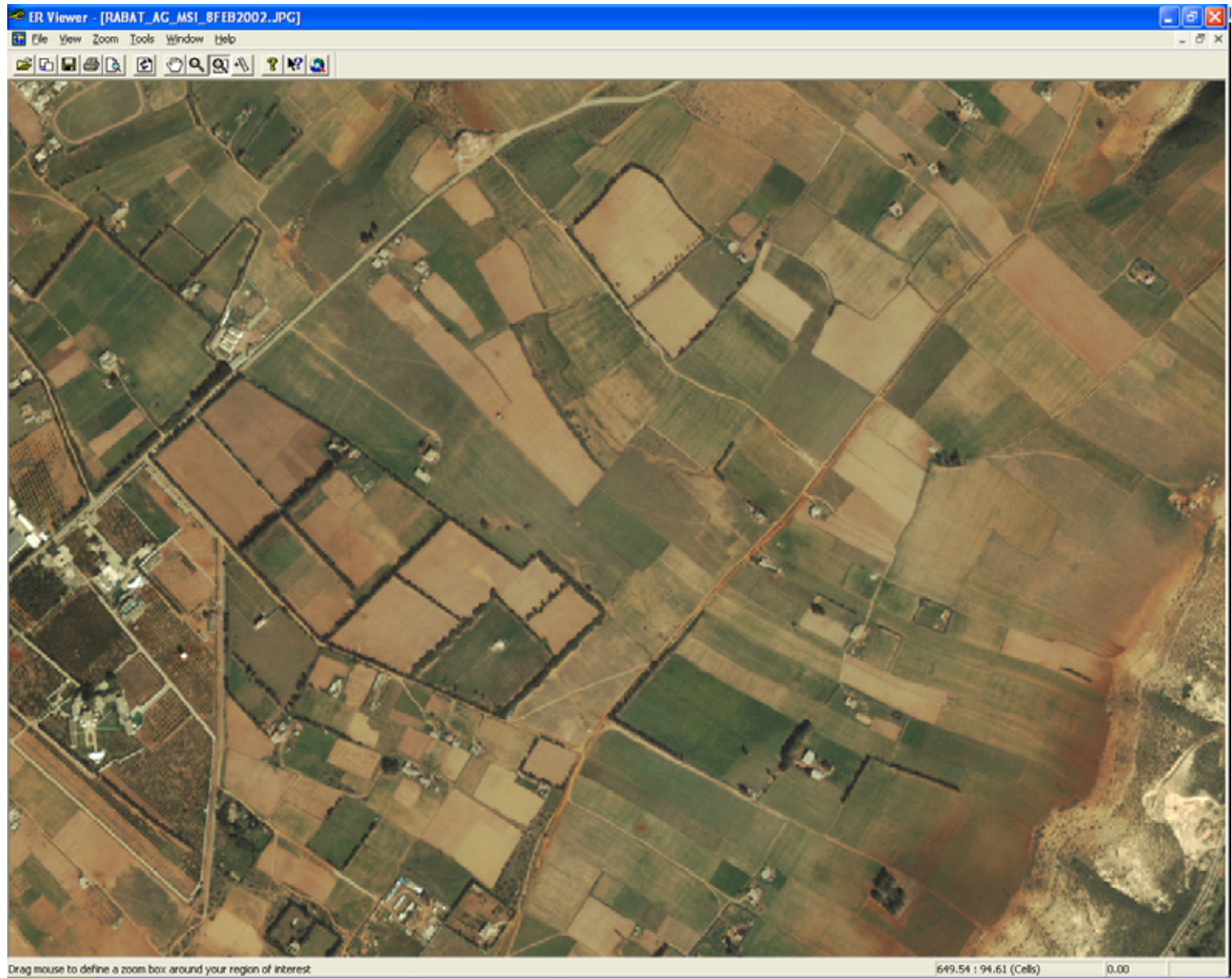
Satellite Imagery and Compliance

- Satellite Imagery may or may not be a viable source of backup imagery for NAIP
- Also a possible adjunct to NAIP Imagery
 - Multi-spectral imagery provides additional information
- Pros
 - Relatively easy to acquire
 - Satellites are already in orbit
 - Some collect continuously
 - Others need to be tasked
 - More satellites will be coming on line in the future
- Cons
 - Limited by weather, just like Aerial Photography
 - The higher the resolution the higher the cost
 - Small coverage areas for high resolution imagery makes it difficult to collect imagery for large areas (whole States)
 - Lower resolution data, like Landsat, may not be viable for measurements or for determining crops in small fields (less than 20 acres)

2.5 Meter SPOT Imagery



QuickBird 1 Meter Imagery





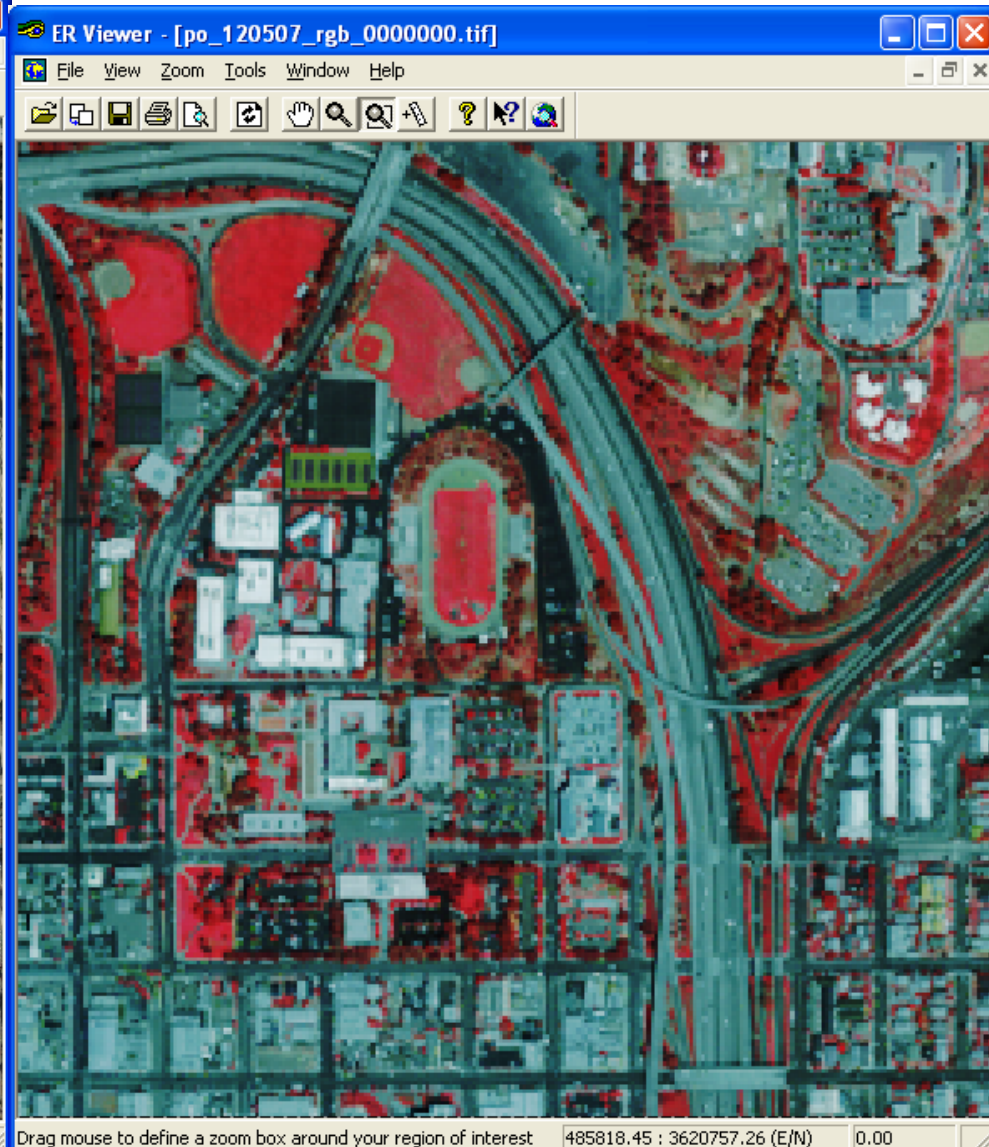
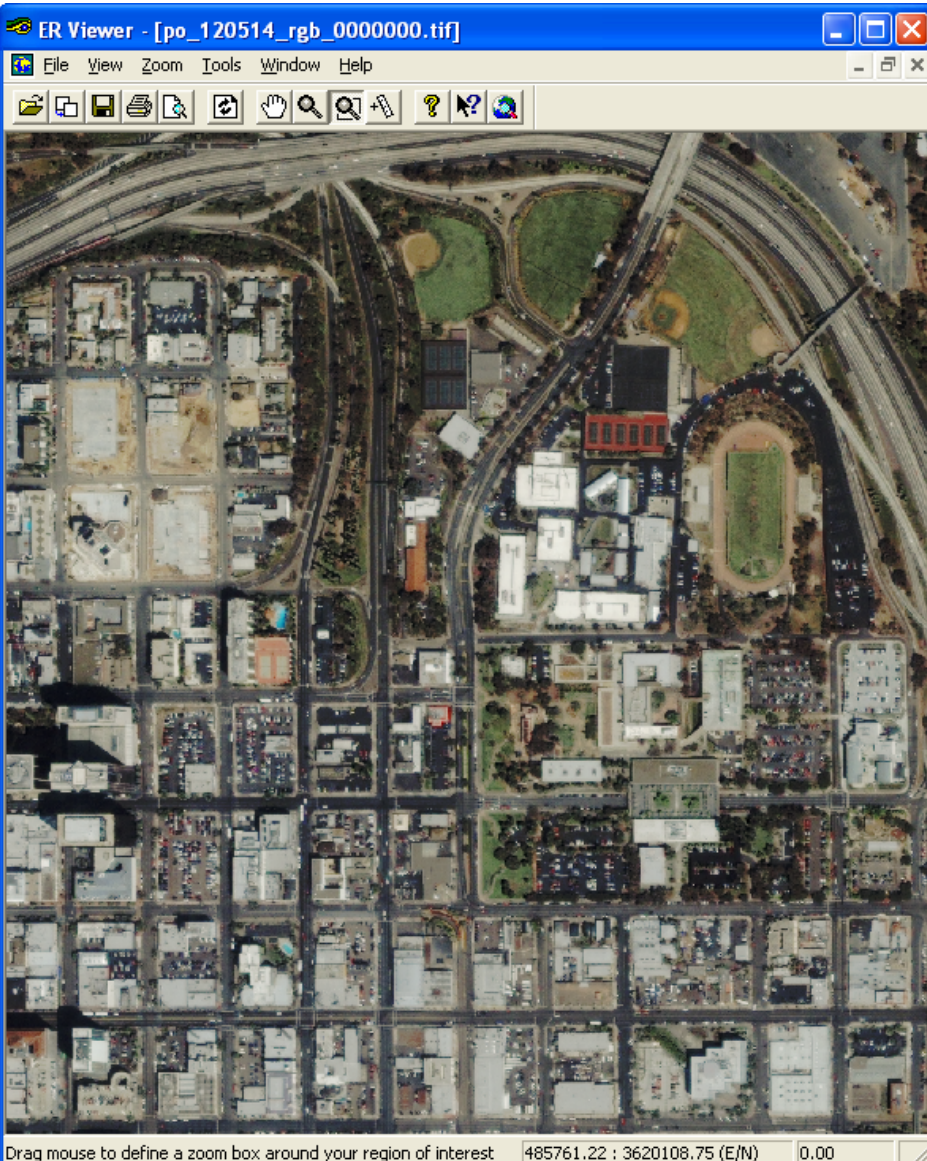
Lower
resolution
multi-
spectral
information

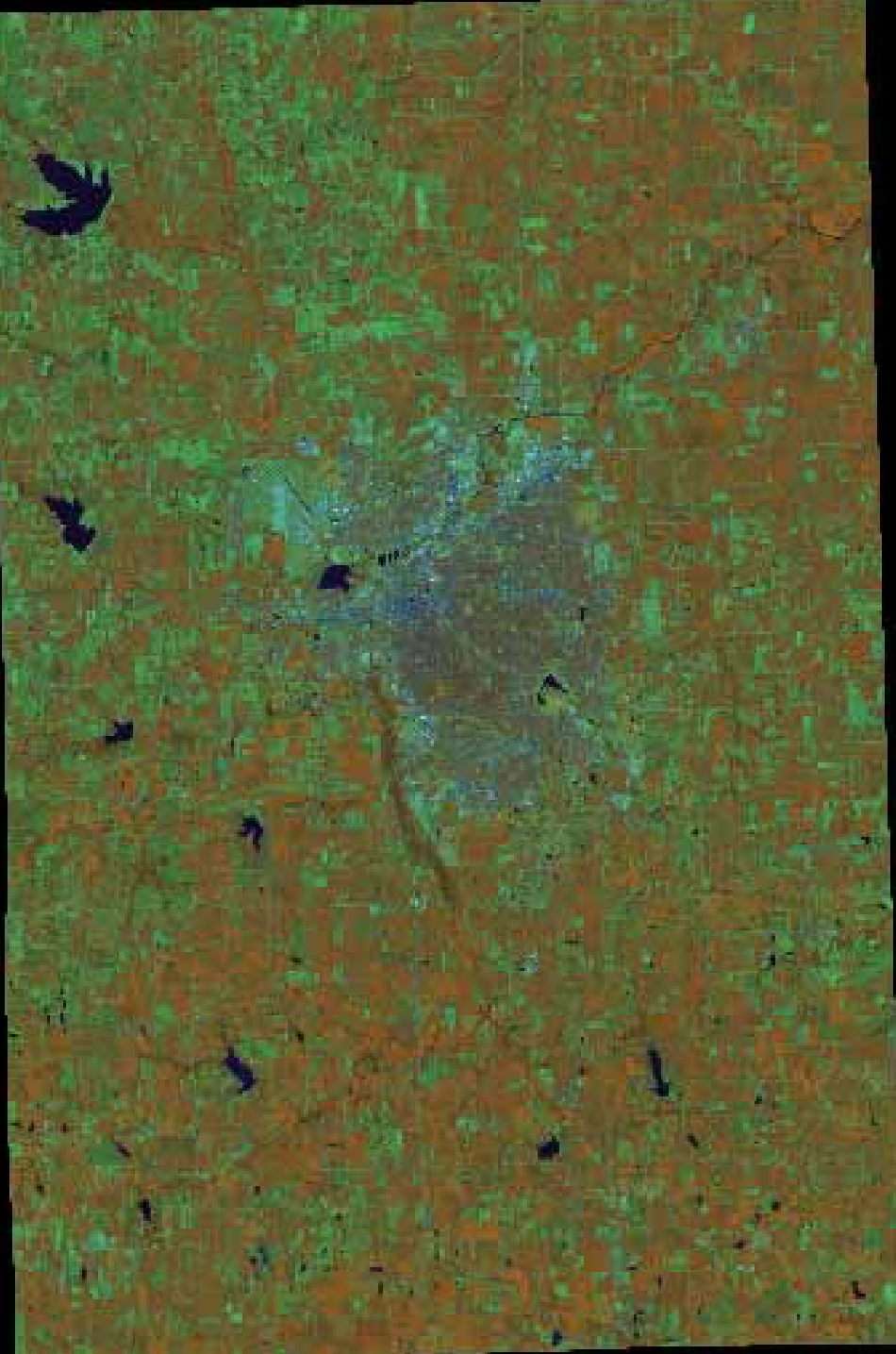
Merged with
high
resolution

B&W Images

QuickBird Pan Sharpened

IKONOS 1 & 4 Meter

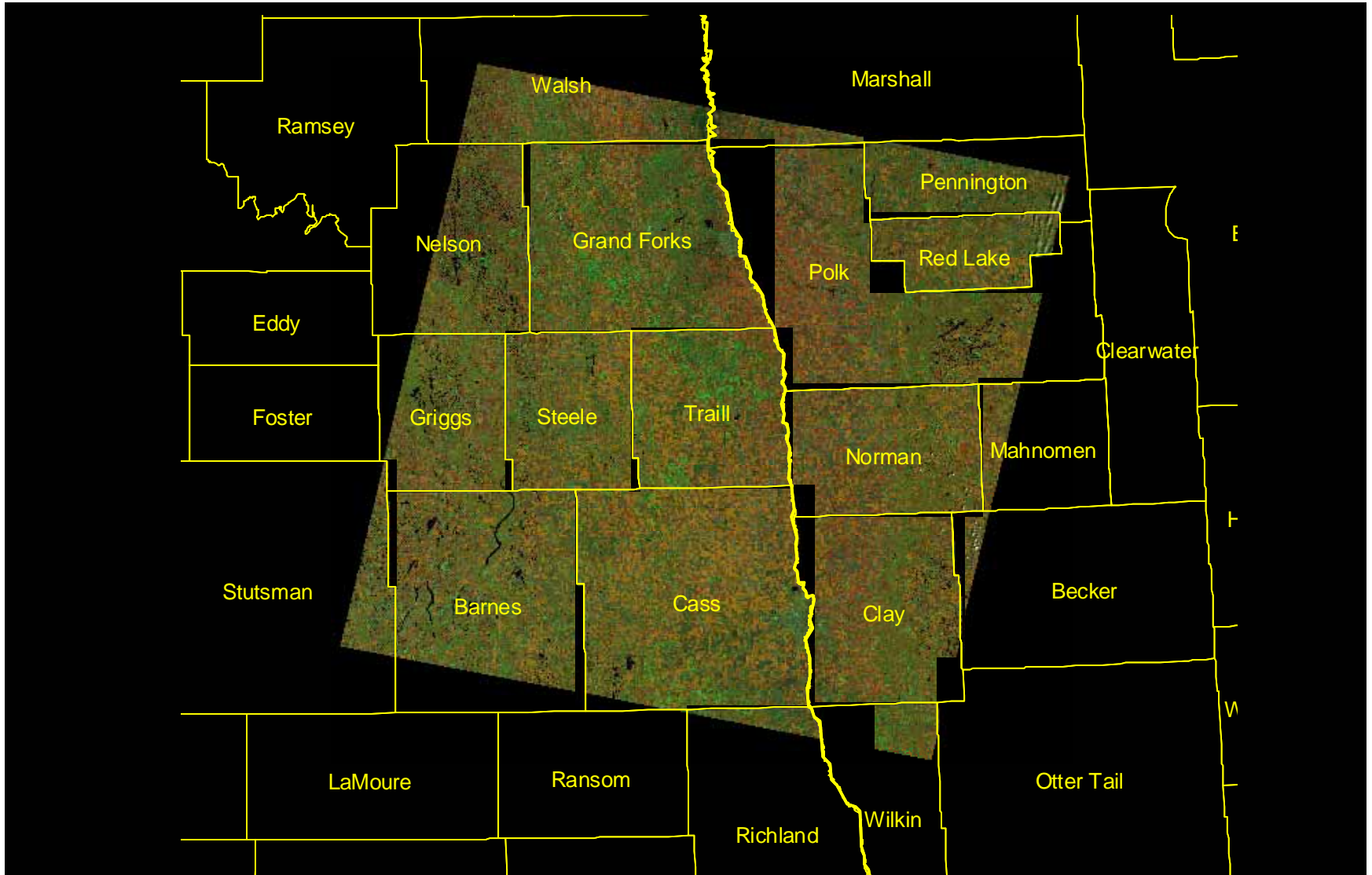




LandSat TM

- 30 Meter
- Multi-spectral
- Large Coverage Area
- Relatively Inexpensive
- USDA gets most LandSat imagery for the US
- Collected every 16 days

Scene Clipped To Intersecting Minnesota and North Dakota Counties





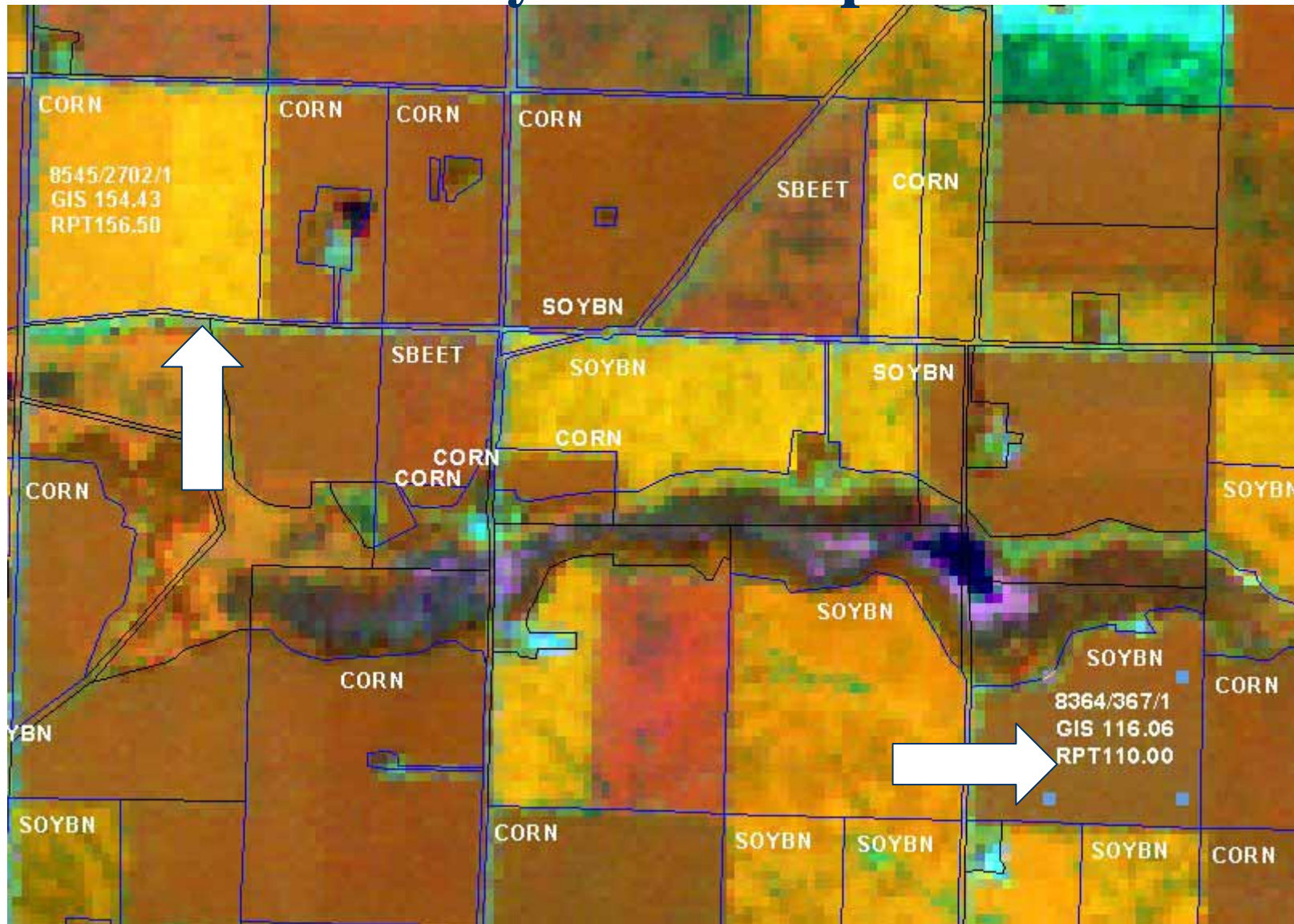
Map of one 578 Crop with CLU over Ikonos Imagery
Unreported Fields Labeled with Crop and Subfields Split and Labeled
FSA/ITSD/RSS 1/12/2001

Corn Reported as Soybeans

0.08 0 0.08 0.16 0.24 0.32 Miles

Map Printed: Jan 12, 2001

Corn and Soybean Compliance Problem



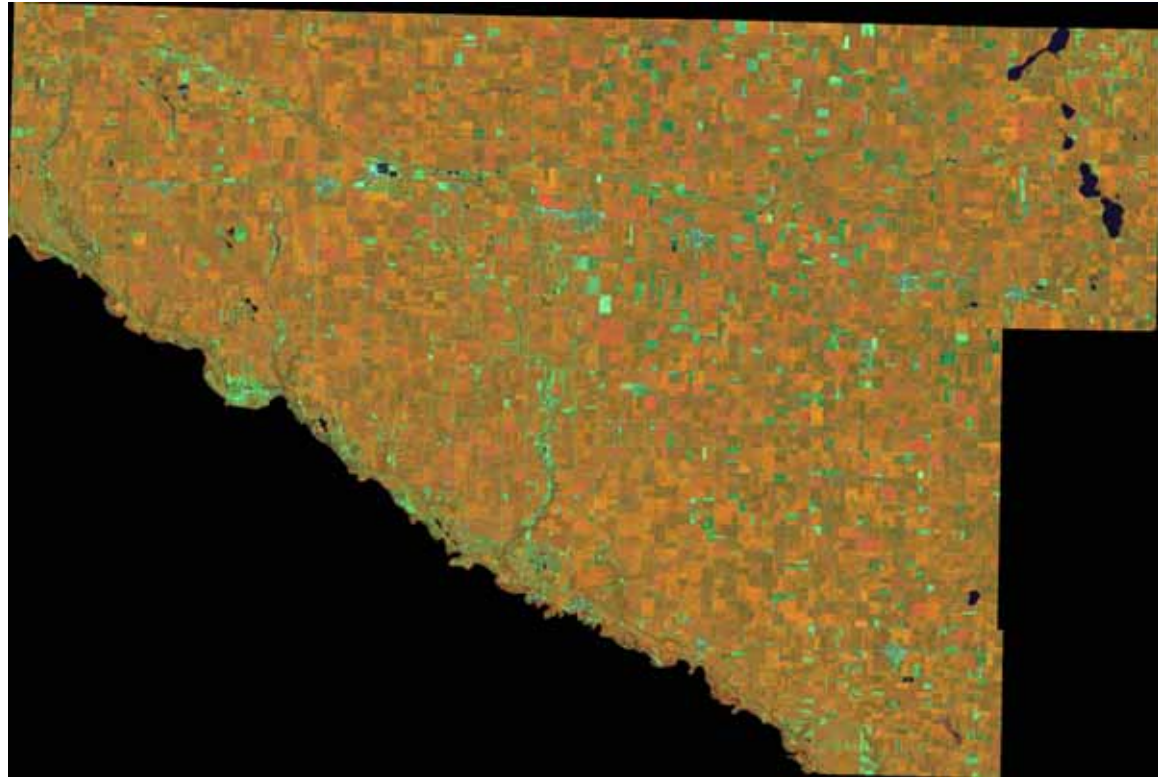
Corn = Brown

Soybeans = Yellow

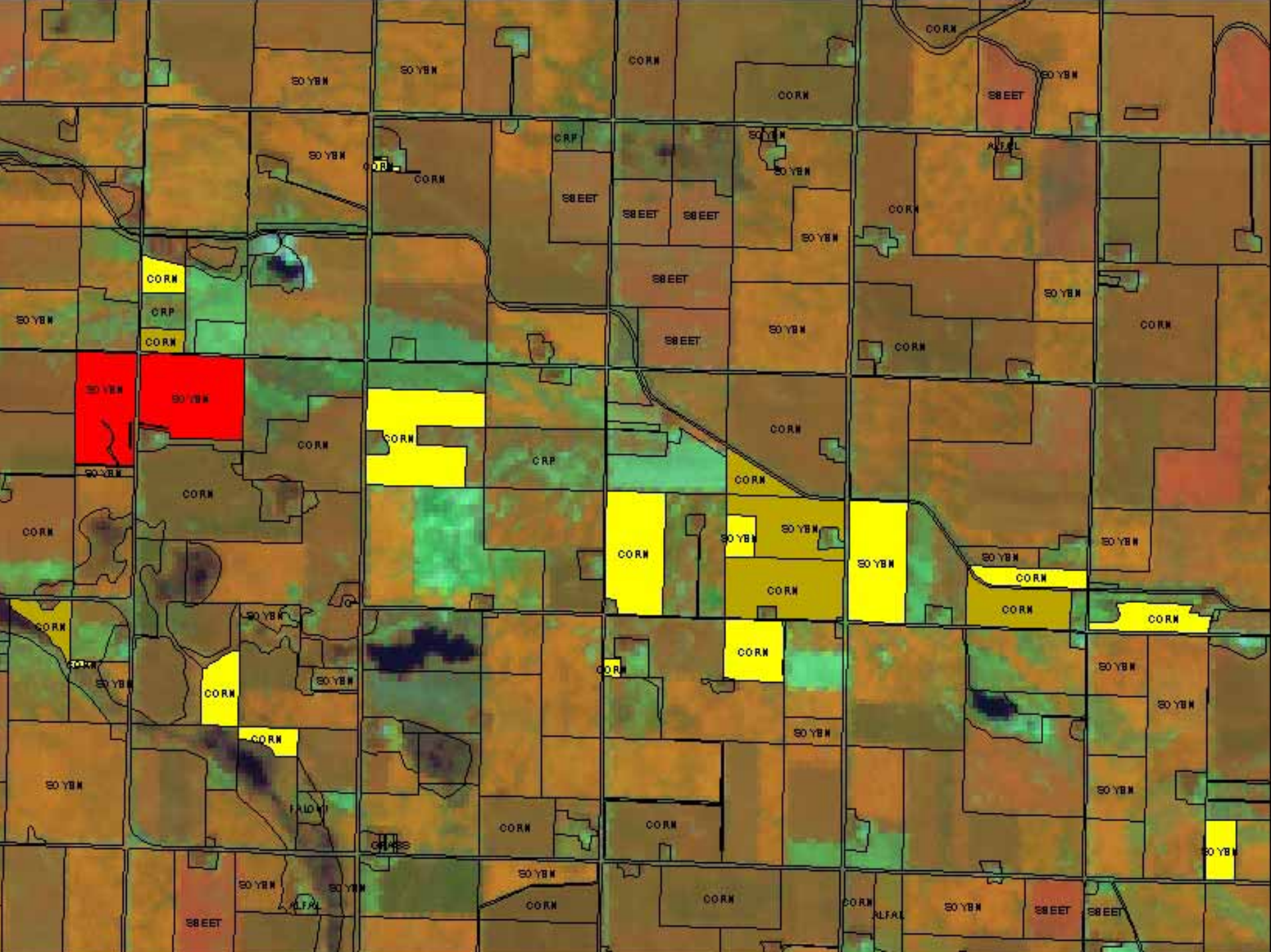
Landsat 5, 8/02/2000

Landsat Images for Counties

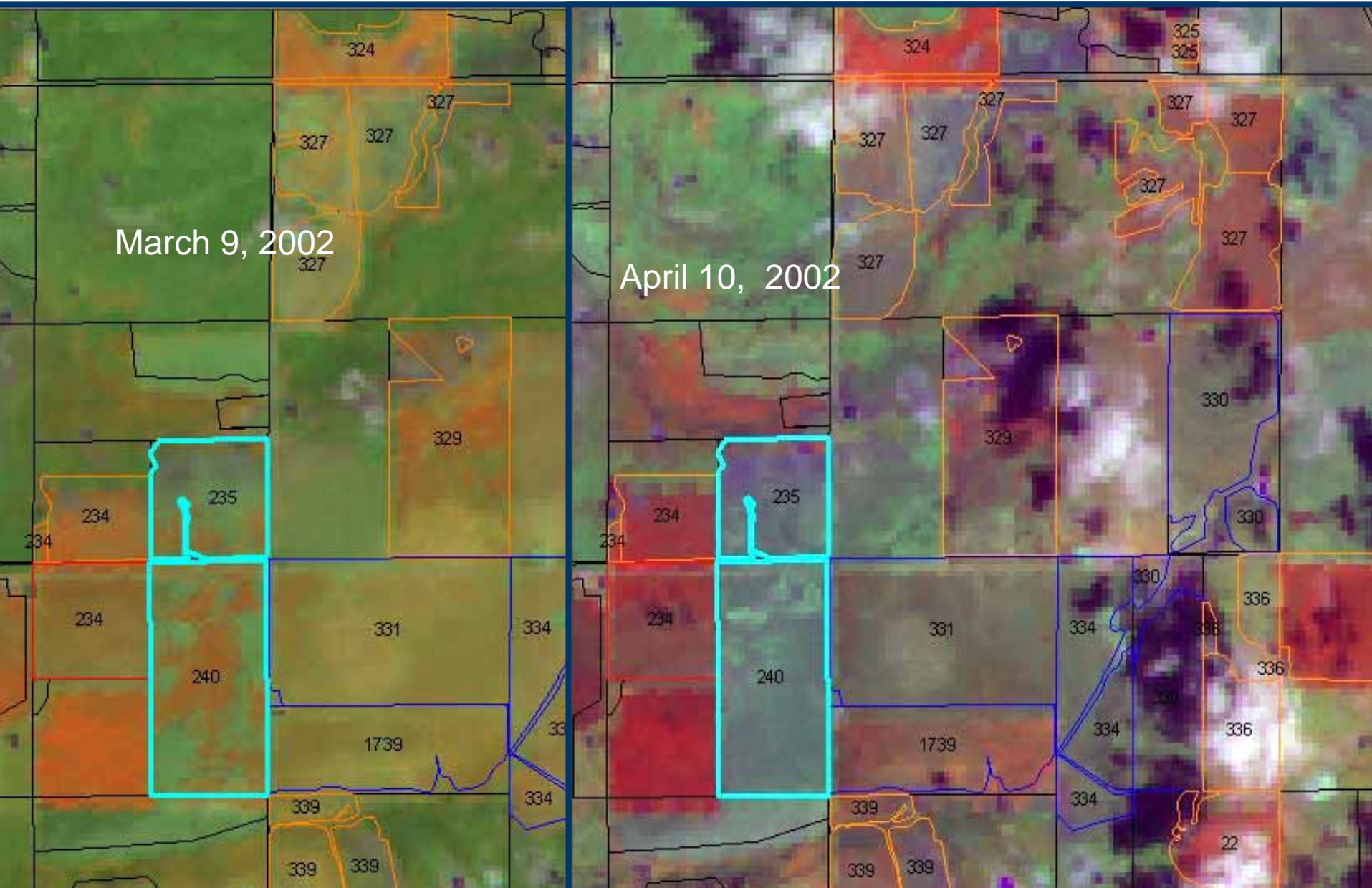
- Provide meaningful, and timely image products to FSA employees.
- Web delivery of compressed images.
- Can be used for visual interpretation of:
 - Crop Condition
 - Preventive Planting
 - Crop Type
 - Disaster Assessment



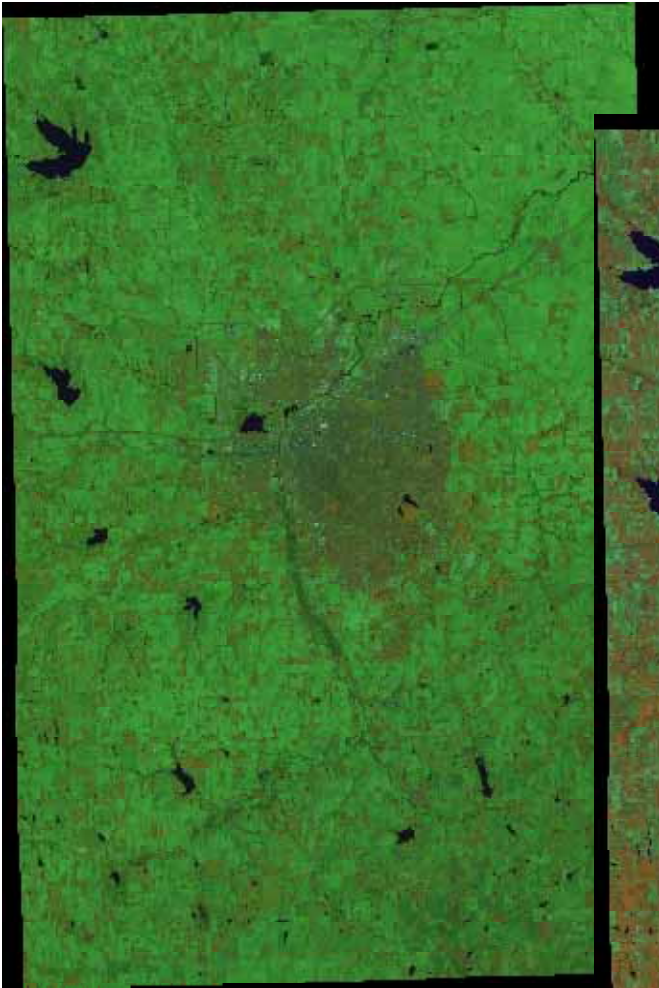




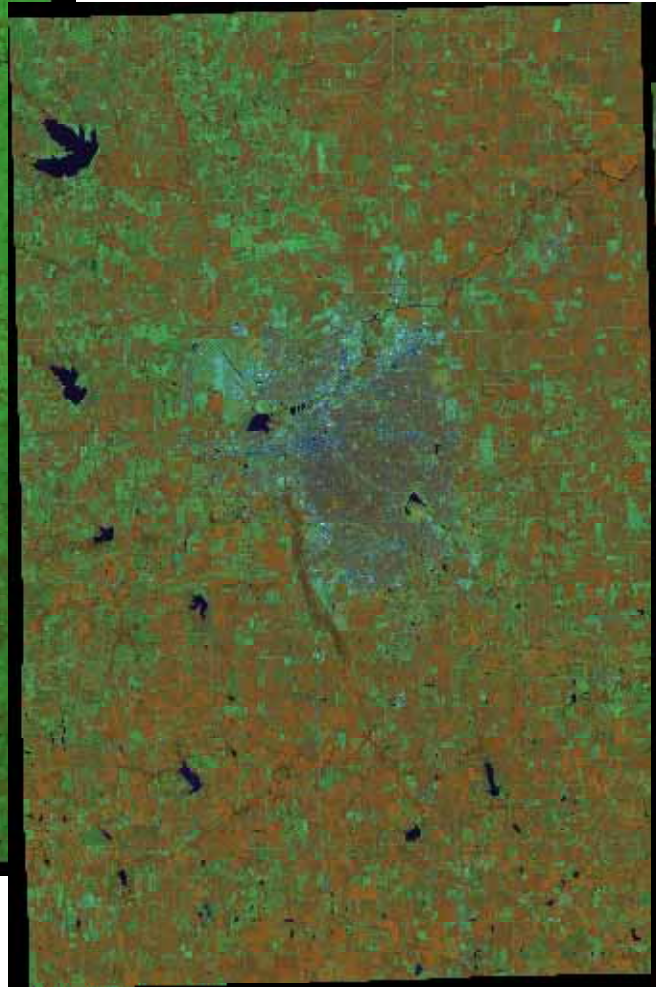
Wheat Abandoned on Farms 235 and 240



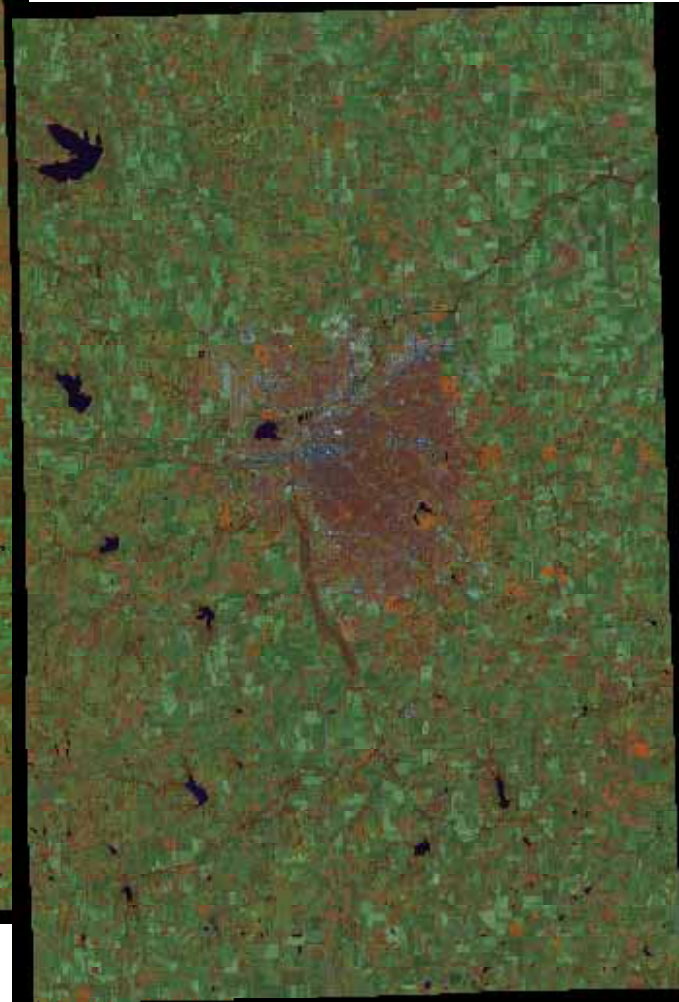
Lancaster, Nebraska Landsat Imagery



April, 2001



August, 2001



September, 2001

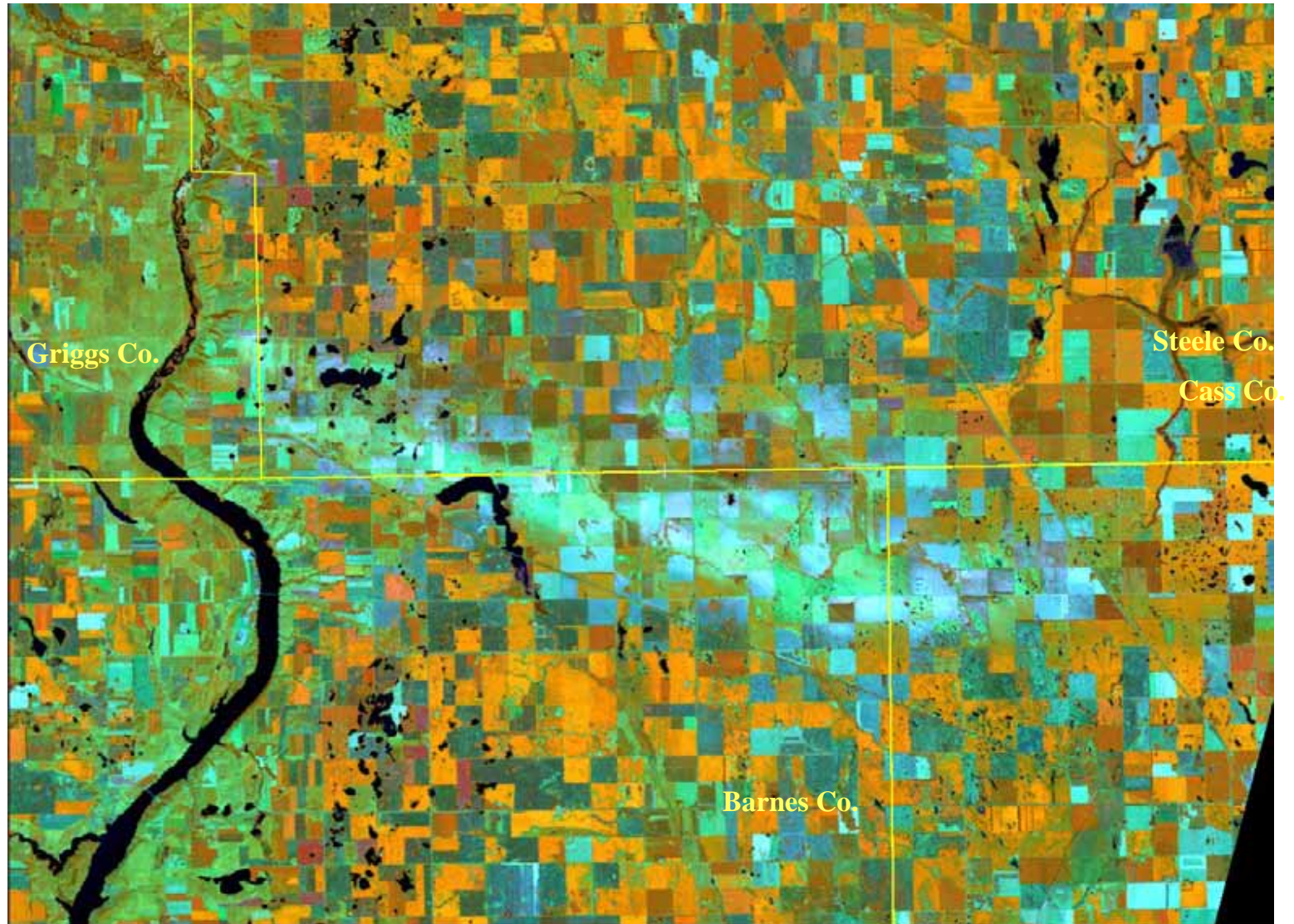
Seasonal comparisons

Steele Co., North Dakota – Before Hail Event 7/29/02



Landsat 7 TM – Ch. 4,5,3 Full Resolution

Steele Co., North Dakota – After Hail Event 8/5/02



Landsat 7 TM – Ch. 4,5,3 Full Resolution

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